Book Project: **DUE DATE: Before Star Testing Date**

What I learned about in AG I Earth Sci. this year!

You will create a book to summarize everything that we have learned so far this year. This project will serve as your TAKE HOME FINAL. I have included which chapters &/or pages in your textbook you can find each piece of information. You can also find information in your packets & internet. Be creative, use visuals and list the standard & explain it in your own words &/or a picture (ex: 4b write &/or draw how the sun is reflected & absorbed on Earth & explain photosynthesis) Act as though you are trying to teach each section to someone else. You will need to make a cover as well. (Cover & Name 13 Points)

Link: Earth Science Standard Explanations
http://hegel.lewiscenter.org/users/mhuffine/subprojects/Department/dlsdsss_docs/stds/earthscicsframe.htm

Materials: Computer paper, marker boxes, etc.

Earth's EnerGy & Atmosphere & Climate (10 points) 33%

1. 4b. Draw & label the fate of incoming solar radiation in terms of reflection, absorption, and photosynthesis. Ch. 11 (8 points)
2. 6b. Draw, label, and/or list the effects on climate of latitude, elevation, topography, and proximity to large bodies of water and cold or warm ocean currents. Ch. 14.1 & 14.2 (12 points)
3. 6c. Explain how the Earth's climate has changed over time, corresponding to changes in Earth's geography, atmospheric composition, and other factors, such as solar radiation and plate movement. Ch.14.3 (8 points)
4. 7b. Draw and label the global carbon cycle: the different physical and chemical forms of carbon in the atmosphere, oceans, biomass, fossil fuels, and the movement of carbon among these reservoirs. Pg. 664 (10 points)
5. 8b. Explain how the composition of the Earth's atmosphere evolved over geologic time and know the effect of outgassing, the variations of carbon dioxide concentration, and the origin of atmospheric oxygen. Ch.11.1 & Pg. 585-588 (8 points)

Circulation Patterns & Currents & OceanoGraphy (10 points) 13%

1. 5a. Draw, label, and/or list how does the differential heating of Earth results in circulation patterns in the atmosphere and oceans that globally distribute the heat. Ch. 11.2 (4 points)
2. 5d. Explain the properties of ocean water, such as temperature and salinity, can be used to explain the layered structure of the oceans, the generation of horizontal and vertical ocean currents, and the geographic distribution of marine organisms. Ch. 15.2 (10 points)
3. 5e. Explain why the rain forests and deserts on Earth are distributed in bands at specific latitudes. Ch.14.1 & 14.2 (4 points)

Astronomy (10 points) 20%

1. 1a. What are the differences and similarities among the sun, the terrestrial planets, and the gas planets may have been established during the formation of the solar system. Ch. 30.3 (4 points)
2. 1b. Explain and/or illustrate how the evidence from Earth and moon rocks indicates that the solar system was formed from a nebular cloud of dust and gas approximately 4.6 billion years ago. Ch. 1.1 Notes & Ch. 29.4 (4 points)
3. 1e. Explain why *the Sun is a typical star and is powered by nuclear reactions, primarily* the fusion of hydrogen to form helium. Ch. 30.1 (4 points)
4. 2a. Illustrate how t*he solar system is located in an outer edge of the disc-shaped Milky Way galaxy, which spans 100,000 light years.* Ch. 31.3 (2 points)
5. 2d. Explain how stars differ in their life cycles and that visual, radio, and X-ray telescopes may be used to collect data that reveal those differences. Ch. 30.3 (4 points)

Physical GeoloGy & Solid Earth (10 points) 23%

1. 1c. Explain the evidence from geological studies of Earth and other planets suggest that the early Earth was very different from Earth today. Ch. 17.1 (2 points)
2. 3a. Explain the features of the ocean floor (magnetic patterns, age, and sea-floor topography) provide evidence of plate tectonics. Ch. 17.2 (6 points)
3. 3b. Explain & illustrate the principal structures that form at the three different kinds of plate boundaries. Ch. 17.3 (6 points)
4. 3e. Illustrate and label the two kinds of volcanoes: one kind with violent eruptions producing steep slopes and the other kind with voluminous lava flows producing gentle slopes. Ch. 18.3 (4 points)
5. 8c. Draw & label the location of the ozone layer in the upper atmosphere, explain its role in absorbing ultraviolet radiation, and the way in which this layer varies both naturally and in response to human activities. Ch. 11.1 (6 points)
6. 9a. List the resources of major economic importance in California and their relation to California's geology. Notes (4 points)
7. 9b. List natural hazards in different California regions and the geologic basis of those hazards. (example: Earthquakes- geological basis is faults) Notes (4 points)

InvestiGation & Experimentation (5 points) 10%

1. es.iela List & describe the Scientific Method steps (test hypothesis, organize data, analyze relationships, and interpret data). Notes & Airplane Lab (4 points)
2. es.ielf Describe the difference between a hypothesis, theory, & law. Notes (6 points)
3. es.ielh Show how to interpret and use topographic maps Ch. 2 & Notes (4 points)
4. Define & Compare Observation versus Inference Notes (4 points)